This project will be your assessment to show your understanding of Coordinates Midpoints and Distance on a coordinate plane. Your task is to be an engineer and plan the layout for a new city. Below are the requirements that this city needs and on the back is a grading rubric on how you will be assessed. **You will be graded by the categories on the Rubric.**

**Needed Buildings**

The city will be represented on a Cartesian Coordinate System. Each unit on the grid is 1 mile. The *direct distances* between buildings will be measured inmiles**.** You need to create a map with locations of these necessary institutions for a city to function.

* Library
* City Hall
* Elementary School
* High School
* Fire Department
* Police Department
* Power Plant
* Shopping Center
* Park
* Hospital
* **Create two buildings that you think a city needs to be the community to live in!!!**

**Requirements for locations**

1. The schools need to be the same distance away from the Police **and**  the Fire Department
2. The High schools need to be less than 10 miles away from the elementary school.
3. The City Hall needs to be in the middle of the Shopping Center and the Park.
4. The power plant needs to be at least 5 miles away from any structures for safety.
5. The Library must be 8 miles or closer to the Elementary school.
6. & 7. **You must also make up two requirements of you own that you think a city should need!!!**

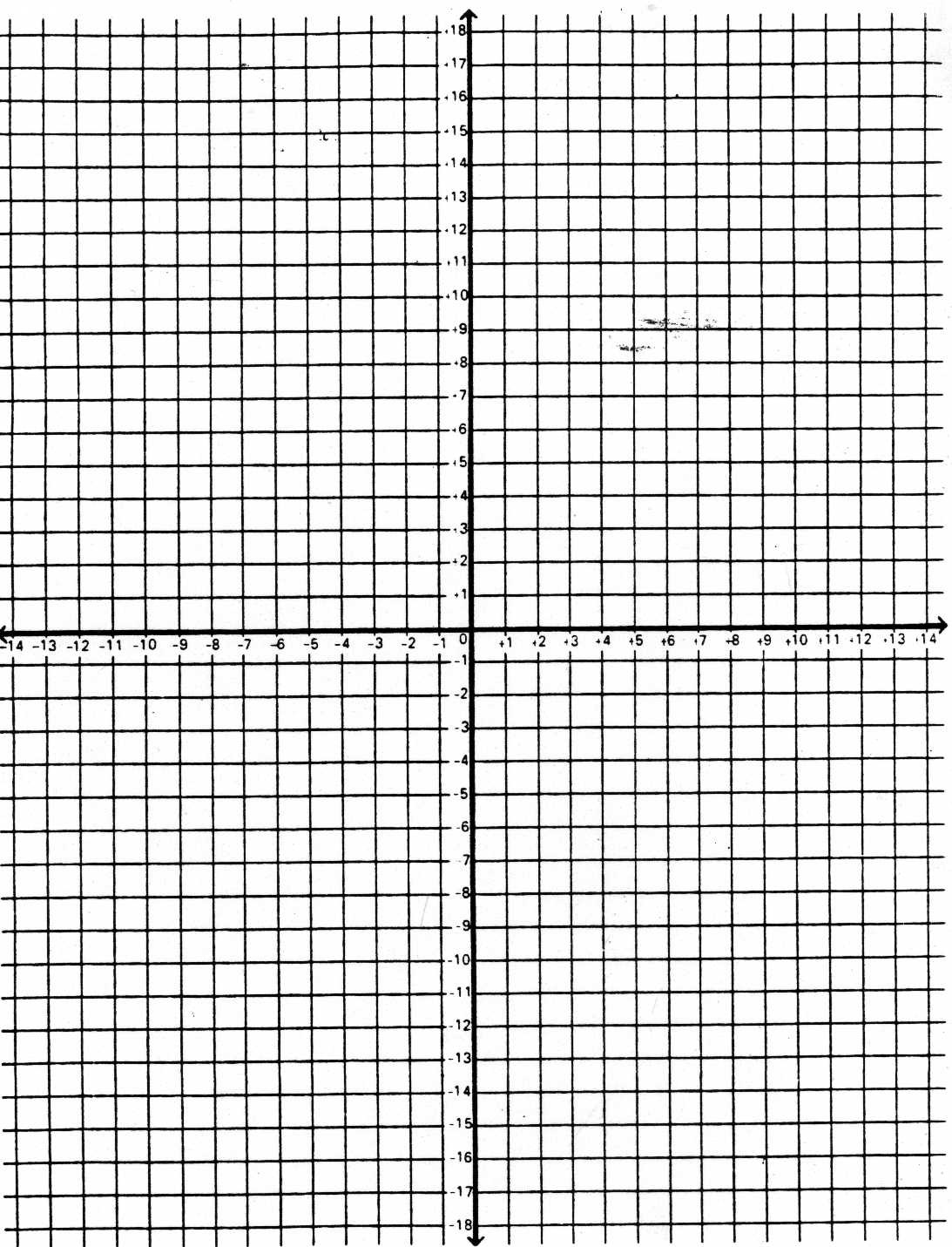
**You have three deadlines** for this task.

1. Turn in a rough draft with all your positions mapped out, and the math to support the 7 requirements **Monday May 12th .**
2. A final copy with revisions made **Friday May 15th.**
3. You will **Present** your city plan to the class on **Friday May 15th**

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| **Categories you will be graded on** | **Excellent**  **( 5 – 4 pts)** | **Fair**  **( 3 - 2 pts)** | **Not quite there**  **( 1 - 0 pts)** |
| **Draft (x2)**  **Due Wednesday May 11th** | Draft is submitted **on time** with the all work showing the requirements are fulfilled | Draft is submitted late or with little work shown | Draft is submitted late, or not at all, with little work shown |
| Use of all city buildings ( x1) | The student has used all the needed buildings | The student has used some, but not all | The student only used 3-4 buildings required |
| Building locations  ( x2) | The student has fulfilled all **requirements** for the position of the buildings | The student has missed 1-2 requirements | The student is missing more than 2 requirements |
| Formulas to show requirements are fulfilled ( x2) | The student has produced **all their work on a separate sheet of paper** that shows that the buildings have fulfilled all requirements | The student has shown **some work but not all the steps,** or some work is incorrect. | Little or no work is shown. |
| Accuracy ( x1) | The student has used all the accurate formulas. | The student has used some, but not all the correct formulas. | The student has not used the correct formulas. |

**Presentation – Friday May 15th**

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| **Categories you will be graded on** | **Excellent**  **( 5 – 4 pts)** | **Fair**  **( 3 - 2 pts)** | **Not quite there**  **( 1 - 0 pts)** |
| Visual Aid ( x2) | You have presented a detailed map of your city to help visualize your plan. Everyone in the class can see the plan. | You have a map of outline you city, but it is hard to visual your plan, hard to see your presentation. | You have provided little detail to your map, and one cannot identify your buildings |
| Creativity ( x1) | You have put thought into your two new buildings and reqs. and an imaginative city plan | You have put some thought into your new buildings and new requirements. | You have put little effort or time into this project. |
| Presentation ( x1) | **All members of the group talk** and share responsibility | There is not an even amount of talking time in the presentation | Only one person talks the entire time. |

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